

PATENT ABSTRACTS OF JAPAN

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(72)Inventor : NARITA YOSHITAKA

(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

(57)Abstract:

PURPOSE: To manufacture an LDD-structured semiconductor device excellent in process stability and in controllability, by forming a reflow film on a gate electrode and making this film reflow so that a projected part is formed on the periphery of the gate electrode.

CONSTITUTION: A BPSG film 14 and a polycrystalline silicon film 13 are patterned into a shape of a desired gate electrode by a RIE method in which photo-lithography is used. While these two-layered films are used as masks, ion implantation of phosphorus as an N-type impurity is performed to form an N⁻ region 15. Next, heat treatment is performed enough to make the BPSG film reflow, and the BPSG film 14 of a gate electrode is made to reflow. Then this film is formed into a shape with a transverse projected part due to surface tension. Next, while the BPSG film 16 is used as a mask, ion implantation of arsenic is performed to form an N⁺ region 17.

